

GENES TESTED WITH INVITAE HEREDITARY BREAST CANCER PANELS

Invitae has extensive testing options for breast cancer, with results in just 10–21 days.

- Invitae Breast Cancer Guidelines-Based Panel (11 genes)**
- Invitae Breast and Gyn Cancers Guidelines-Based Panel (19 genes)**
- Invitae Breast Cancer Panel (14 genes)**
- Invitae Breast and Gyn Cancers Panel (23 genes)**
- Customized test options**

Invitae also offers STAT panels, with results available in 5–12 days (7 days on average).

- Invitae Breast Cancer STAT Panels (up to 9 genes)**

GENES TESTED:

- | | |
|---------------------------------|----------------------------------|
| <input type="checkbox"/> ATM | <input type="checkbox"/> NBN |
| <input type="checkbox"/> BARD1 | <input type="checkbox"/> NF1 |
| <input type="checkbox"/> BRCA1 | <input type="checkbox"/> PALB2 |
| <input type="checkbox"/> BRCA2 | <input type="checkbox"/> PMS2 |
| <input type="checkbox"/> BRIP1 | <input type="checkbox"/> PTEN |
| <input type="checkbox"/> CDH1 | <input type="checkbox"/> RAD50 |
| <input type="checkbox"/> CHEK2 | <input type="checkbox"/> RAD51C |
| <input type="checkbox"/> DICER1 | <input type="checkbox"/> RAD51D |
| <input type="checkbox"/> EPCAM | <input type="checkbox"/> SMARCA4 |
| <input type="checkbox"/> MLH1 | <input type="checkbox"/> STK11 |
| <input type="checkbox"/> MSH2 | <input type="checkbox"/> TP53 |
| <input type="checkbox"/> MSH6 | <input type="checkbox"/> _____ |

NOTES:

SIMPLE BILLING, NO SURPRISES

WITHIN THE UNITED STATES

INSURANCE

You won't need to contact your insurance company to find out if testing is covered or to obtain reimbursement; Invitae will work directly with them to coordinate coverage and payment. Typically patients pay no more than \$100 out of pocket for one of our tests. If you receive a bill for more than \$100, please call us to discuss payment options.

PATIENT PAY

You have the option to pay \$250 for your hereditary cancer genetic testing. This option requires upfront payment before test results are released. In addition, your clinician must place the order online and provide your e-mail address so we can send you a link to pay online using a credit card.

MEDICARE & FINANCIAL ASSISTANCE

Invitae accepts Medicare and Medicaid. We may also be able to offer testing at limited or no expense to those who qualify for need-based assistance.

For further information, please contact Client Services at clientservices@invitae.com or 800-436-3037.

OUTSIDE THE UNITED STATES

PATIENT PAY

You have the option to pay \$250 for your hereditary cancer genetic testing. This option requires upfront payment before test results are released. In addition, your clinician must place the order online and provide your e-mail address so we can send you a link to pay online using a credit card.

INSTITUTIONAL BILLING

Invitae will work with your institution to set up a contract if one is not already in place.

For complete billing information, please visit www.invitae.com/billing.

This guide applies only to gene and panel testing; for exome testing please see the Invitae exome patient guide.



INVITAE

Understanding
hereditary breast cancer

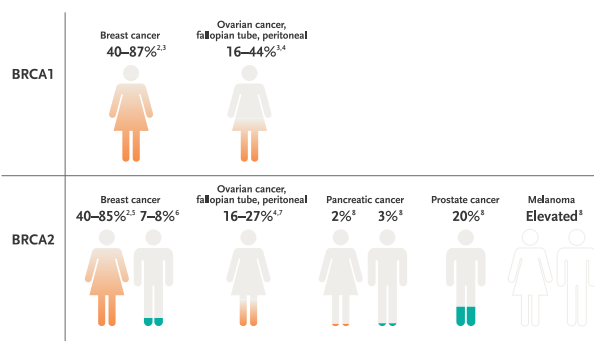
THE GENETICS OF BREAST CANCER

Approximately 10 percent of patients with breast cancer have a genetic variant that increases their risk of developing the disease. An additional 20 percent have a close family member who also had breast cancer, suggesting a familial link even though no specific genetic variant was identified.¹

BRCA1 and BRCA2 are the most common genes known to increase the risk of breast and ovarian cancers. Variations in these genes can also increase the risk for other cancers, including fallopian tube cancer, primary peritoneal cancer, pancreatic cancer, melanoma, male breast cancer, and prostate cancer.

LIFETIME CANCER RISKS

A genetic variation in BRCA1 or BRCA2 can increase the likelihood that a person will develop cancer in his or her lifetime.



Many other genes can increase an individual's risk of developing breast cancer, including CDH1, PALB2, PTEN, STK11, and TP53. Like BRCA1 and BRCA2, many of these genes also influence risk for other types of cancers.⁹

1. Zimmerman, BT. Understanding breast cancer genetics. Jackson, MS: University Press of Mississippi, 2004.
2. Hopper, JL et al. *Cancer Epidemiol Biomarkers Prev.* 1999; 8:741-747.
3. Ford, D et al. *Lancet.* 1994; 343:692-695.
4. Struwing, JP et al. *N Engl J Med.* 1997; 336(20):1401-8.
5. King, MC et al. *Science.* 2003; 302:643-646.
6. Evans, DG et al. *J Med Genet.* 2010; 47:710-1.
7. Ford, D et al. *Am J Hum Genet.* 1998; 62:676-89.
8. The Breast Cancer Linkage Consortium. *J Natl Cancer Inst.* 1999; 91:1310–1316.
9. National Comprehensive Cancer Network®, Clinical practice guidelines in oncology. Genetic/familial high-risk assessment: breast and ovarian, version 1.2015. Accessed June 2015.

WHO SHOULD CONSIDER GENETIC TESTING?

Genetic testing may be appropriate if you have:⁹

- breast cancer diagnosed before age 50
- ovarian cancer at any age
- male breast cancer at any age
- bilateral breast cancer or two separate breast cancer diagnoses
- triple-negative (ER/PR/HER2-neu negative) breast cancer
- both breast and ovarian cancer in close relatives on the same side of your family
- breast cancer in two or more close relatives on the same side of your family
- a close blood relative with cancer in both breasts
- a known familial genetic variant in a breast cancer susceptibility gene
- Ashkenazi Jewish heritage with a family history of breast cancer
- a clustering of cancers that may suggest an inherited cancer syndrome, such as breast cancer, thyroid cancer, pancreatic cancer, prostate cancer, bone or soft tissue cancer, sarcoma, adrenocortical carcinoma, or leukemia/lymphoma—all on the same side of your family

NOTES:

Learn more at www.invitae.com/patients.

WHAT ARE THE BENEFITS OF TESTING?

If you have an elevated risk of developing cancer based on your genetic test result, you can work with your healthcare provider to create a plan designed to prevent a cancer entirely, or help to identify a cancer at an earlier, more treatable stage.

In addition, genetic testing can help:

- provide an explanation for your personal or family history of cancer
- evaluate your risk of developing future cancers
- make informed medical decisions, including treatment, surveillance, and preventive options
- qualify you for participation in clinical trials or research studies
- identify other at-risk relatives for whom genetic testing is recommended

WHAT ARE THE POTENTIAL RESULTS?

POSITIVE

If testing identifies a variant known to increase your cancer risk, consult with your doctor to create a screening and management plan and to identify relatives who may need to be tested.

NEGATIVE

If testing identifies no variants known to increase cancer risk, your future risk depends on your personal medical history and family history of cancer. This does not rule out other genetic conditions; consult with your doctor to discuss surveillance recommendations.

VARIANT OF UNCERTAIN SIGNIFICANCE

In some cases, testing can identify a variant, but it is not known at this time whether the variant increases the risk for cancer. In this case, your cancer surveillance recommendations should be based on your personal and family medical histories.